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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,478	01/16/2004	Hans-Wilm Heinrich	KH-1794	7579

7590 06/10/2005

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EXAMINER

MAI, NGOCLAN THI

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,478

Applicant(s)

HEINRICH ET AL.

Examiner

Ngoclan T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/16/04.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 24-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/16/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-23, drawn to fine grained sintered cemented carbide, classified in class 75, subclass 236.
 - II. Claims 24-36, drawn to method of making, classified in class 419, subclass 14.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made forming a compact of hard phase material and then infiltrating the compact with a second phase of metallic binder.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with applicant's attorney John J. Prizzi on March 14, 2005 a provisional election was made with traverse to prosecute the

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invention of group I, claims 1-23. Affirmation of this election must be made by applicant in replying to this Office action. Claims 24-36 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al (6,207,262) in view of Meadow et al. (US 3,451,791).

Ichikawa et al. disclose a tungsten carbide based cemented carbide substrate for use as endmill cutter comprising 5-20% Co, optionally 0.1 to 2.0% Cr and/or V as a binder phase forming component, 0.1-5% one or more of carbide or carbonitride of at least one metal selected from Ti, Ta, Nb, Zr as a dispersed phase forming component and the balance WC, which has an average grain size of 0.1 to 1.5 microns, (col. 2,

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lines 25-35). While Ichikawa et al. do not specifically teach the presence of Ta in the binder phase as recited in claim and Nb as recited in claim 5-7, the binder phase of the sintered cemented tungsten carbide taught inherently have them because it is known in the art that when specified amounts of Ta, Cr, V, Mo, etc. added to a WC-Co cemented carbide in the form of carbide, the growth of the WC grains is suppressed during the process of sintering, and that after sintering, one portion of thereof dissolves into the iron group metals in the form of solid solution with the remaining portion becoming precipitated as a carbide phase. (Note that Aoki et al, is cited to show this fact but not used in the rejection, col. 4, lines 14-21). Thus the binder phase of the sintered cemented carbide disclosed, in addition to Co, Cr and/or V, can contain at least one of Ti, Ta, Nb and Zr and the carbide phase in addition to WC can have TaC, TiC, NbC, and ZrC.

The difference between the claims and Ichikawa et al. is that Ichikawa et al do not teach the presence of W in binder phase.

Meadow et al teach a cobalt bonded tungsten carbide where the binder of Co contain 8-33% tungsten to improve it s acid resistant, col. 2, lines 37-38.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include tungsten in the binder of Ichikawa et al. to improve its acid resistant as taught by Meadow et al.

Regarding claims 3-6, 11-14, and 17-18, since Ichikawa et al teach the sintered cemented carbide with constituents whose wt% ranges overlap those recited by the claims; such overlapping range renders applicant's sintered cemented carbide prima


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facie obvious despite difference in non-overlapping areas, see *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Note that the amounts of binder phase forming material, i.e. 0.1 to 2% Cr and/or V, is equivalent to 0.5 to 40% in the binder phase. Furthermore, in view of the overlapping in composition, the composition taught by the prior art would be expected to possess the same properties of applicant's sintered cemented carbide as recited in claims 7-8, 15-16 and 19-20. See *In re Best*, 195 USPQ 430.

Regarding claim 21, Ichikawa et al disclose hard-material coated layer on the sintered cemented carbide substrate, see col. 2, lines 11-20 formed by CVD.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoclan T. Mai
Primary Examiner
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